



hp StorageWorks performance advisor xp 2.0

Troubleshooting Guide

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Overview

This document provides troubleshooting strategies (appearing in alphabetical order) to help you determine and resolve any problems that you might encounter while using Performance Advisor XP (PA XP).

Os in the Data Fields

After data has been collected from the host agent, 0s are generated when the host agent is unable to produce data for unsupported fields. In PA XP's Components screen, a time stamp (date and time) appears after a data collection cycle is completed for the selected array.

Port I/O applies to all of the arrays, except the XP256 since the firmware does not produce those data fields. The chart for Port IOs will not display records when all of the port data fields are 0s.

LDEV I/O values vary by array firmware and RMLIB.

PA XP supports the MB/s and LUSE on all arrays, except the XP256.

Support Level Descriptions

- No support - No data is collected, and the thread exits.
- Basic support - PA 1.00.00 through PA 1.05.00 style data, plus four other data types in PA 1.06.00. The mainframe data is the Cache Fast Write, Disk Fast Write, and Cache Mode. Backend transfer was also added in PA 1.06.00.
- MB/s and basic LUSE Support - PA 1.06.00 and greater, the LUSE fields for random and sequential values (I/O and block) are copied into the individual random and sequential fields. They are the same on non-LUSE devices. PA XP's xpdevicemap only sees the head of a LUSE set, which serves as the entire LUSE read. The GUIs and CLUIs make no distinction for a LUSE or a single logical device.
- 8-disk RAID group support - Requires firmware of at least 21-03-00 and RMLIB version of at least 01.09.03.

XP256 Capability Levels

Array Microcode	RMLIB less than 01.03.02	RMLIB at least 01.03.02
at least 52-48-53	No support	Basic support
less than 52-48-53	No support	No support

XP48 and XP512 Capability Levels

Array Microcode	RMLIB less than 01.03.02	RMLIB at least 01.03.02	RMLIB at least 01.04.01
at least 01-13-18/xx	No support	Basic support	MB/sec and LUSE support
at least 01-12-18/xx	No support	Basic support	Basic support
less than 01-12-18/xx	No support	No support	No support

XP128 and XP1024 Capability Levels

Array Microcode	RMLIB less than 01.06.03	RMLIB at least 01.06.03	RMLIB at least 01.07.01
at least 21-03-00	No support	MB/sec and LUSE support	8-disk RAID groups
at least 20-00-01	No support	MB/sec and LUSE support	MB/sec and LUSE support
less than 20-00-01	No support	No support	No support

XP12000 Capability Levels

Array Microcode	RMLIB less than 01.09.03	RMLIB at least 01.09.03
at least 50-01-30-00/00	No support	Full support

Access Log Files

To reduce the maintenance required on the management station, PA XP has disabled writing to /hpss/apache/logs/access.log. To use access.log for debugging, delete the CustomLog directive. To do so, follow these steps:

1. Go to Start > Settings > Control Panel > Services.
2. Click HpssApache.
3. Click Stop.

Note: You will not need to stop your host agents. The host agents will automatically resume after you restart the Apache service. Errors will appear in nohup.out on UNIX stations; however, the functionality will resume.

4. In a text editor, open hpps/apache/conf/httpd.conf.
5. Locate #CustomLog logs/access.log common.
6. Delete the # sign at the beginning of the line.
7. Click Save.
8. Return to Start > Settings > Control Panel > Services.
9. Click HpssApache.
10. Click Start.

You can now use access.log for debugging.

Alarms Are Not Being Sent by E-mail

Go to the management station at ...\\hpss\\pa\\properties and edit the serverparameters.properties file in a text editor. Find the field named SMTP_Servers_And_Ports, and put in one or more SMTP server names. See the comments in the file for more information.

Note: Start and then stop the HpssApache, HpssPaSolid, and HpssPaTomcat services. If using Command View XP, use Command View's stop/start mechanism to cycle the HpssApache service.

Browser Compatibility

- You must have Microsoft Internet Explorer 6.0 (Service Pack 1) or later.
- For Microsoft IE, you must have Java 1.4.2_03. The level can be seen by viewing the Java Console from the browser. This can be enabled by using Advanced Options and re-opening the browser.
- If you are operating HP-UX with Netscape Navigator, see [Netscape 7.0 or greater: client browser not working on HP-UX](#).

Browser Refresh Problem

If the browser is not displaying the table of contents in the online Help, follow these steps:

1. Go to Tools > Internet Options > General Settings.
2. Under Temporary Internet files, click Settings.
3. Select Every time you start Internet Explorer.

Database Attributes Need to Be Configured on the Web Server

...\\hpss\\pa\\properties\\DBParameters.properties

These parameters are read when the web server service is started.

You can change some items if you need to gain greater control over access to your data. Remember that these parameters and the database engine itself must stay in agreement or undesirable consequences might result. When changing these values, record the changes in a safe, well-known location. This will protect you if the file is subsequently changed. The stored procedures and triggers (Java and SQL) involved have been tested with Solid's embedded database engine with the goal of being JDBC compliant. These parameters are provided to allow you flexibility if you decide to exercise these options. This code has not been tested recently with other database engines.

This file is for database-specific needs, and can be edited by the user only after installation. The Web server must be stopped and restarted after each change.

The following database values are used, and set in the shown locations:

- DataBaseDriver=solid.jdbc.SolidDriver
- BaseURL=jdbc:solid://localhost:1313

- DataBaseName=
- UserId=dba
- Password=isoMorph

Use the following formula to determine the disk space requirements for PA XP (based on the number of arrays, total LDEVs, collection period, and quantity of performance data):

Free Space = Total required free disk space in MB

History Length = Length of the performance data history in days

LUNs = Total number of LUNs of the system (include all hosts)

Collection Period = Collection period in minutes

Free Space = 1.65 + ((0.000165) * LUNs * (History Length * 24) * (60/Collection))

History Length = (Free Space - 1.65)/((0.000165) * LUNs * 24 * (60/Collection))

Collection Period = ((0.000165) * LUNs * (History Length * 24) * 60)/(Free Space - 1.65)

Example:

Free Disk (MB)	History Length (Days)	LUNs	Collection Period (Minutes)
2014	127	4000	60
2026	365	1400	60
889	28	4000	30
2026	356	350	15
1475	31	1000	05
1998	28	300	01

Daylight Savings Time Problem

The following message might appear in the application event log:

Database Warning - Primary Key Unique Constraint Violation: This may be due to a change of time on a host

(i.e. daylight savings)

This warning occurs when the time on the host agent has changed either because of daylight savings time or a manual change was made. The error should stop occurring as soon as the amount of time that changed, such as one hour for daylight savings time, has passed.

Exporting and Importing Data from PA XP Database

If PA XP's database becomes corrupt, the data from the database might still be in a usable form. You can use the export and import tools to populate a new database with the existing data.

Using the export tool

1. Before running the exportDB.bat file, stop all PA XP services.
2. Rename ...\\HPSS\\padb\\solid.ini to ...\\HPSS\\padb\\solid.ini.org.
3. Copy ...\\HPSS\\padb\\tools\\solid.ini to the ...\\HPSS\\padb directory.
4. Set the correct database size in the new solid.ini file. See the ...\\HPSS\\padb\\solid.ini.org file for the configured database size.
5. Delete all ...\\HPSS\\padb\\sol*.log and ...\\HPSS\\padb\\sol*.out files.
6. Start all PA XP services.
7. In the ...\\HPSS\\padb\\tools directory, execute the exportDB.bat file.
The exportDB.bat file creates .dat and .ctr files in the ...\\HPSS\\padb directory. This might take a long time to complete, depending on the size of the database.

Using the import tool

Note: You can use the importDB.bat file only after the exportDB.bat has completed successfully.

1. Stop the HpssPaSolid service, and either delete or rename the .db files in the ...\\HPSS\\padb directory.
2. Copy the ...\\HPSS\\padb\\backup\\solid.db file to the ...\\HPSS\\padb directory.
3. The solid.db file is in read-only format. Clear the Read-only checkbox in the file's Properties dialog box.
4. Start the HpssPaSolid service.
5. In the ...\\HPSS\\padb\\tools directory, execute the importDB.bat file.
The importDB.bat file imports the .dat and .ctr file contents into the empty database. This might take a long time to complete, depending on the size of the database.
6. After the new database is created successfully, stop the HpssPaSolid service.
7. Delete the ...\\HPSS\\padb\\solid.ini file.
8. Rename the ...\\HPSS\\padb\\solid.ini.org file to ...\\HPSS\\padb\\solid.ini.
9. Delete all of the .ctr and .dat files from the ...\\HPSS\\padb directory.
10. Delete any ...\\HPSS\\padb\\sol*.log files that exist.
11. Start all PA XP services.

First PA XP Page Is Slow to Respond after Code Install

If this is the first time the browser has been used after installing new code on the server, please wait while the browser reads approximately 1 MB of Java code from the server and caches it on the local hard drive.

Host Agent Aliasing

Sometimes a host station is connected to more than one network, and it can have a different name on each network. To change the host name that the host agent looks for, use the `paxp_service.properties` file.

To specify the host name that you want to respond to, add `Localhost=` followed by the name that you want to use or with the name you want to be used. For example:

```
Localhost=alias.yourcompany.com
```

Host Station Does Not Appear in Host Information

1. Verify that the management station network address entered in the `paxp_service.properties` file is correct.
2. Verify the network configuration by pinging.
3. Verify browser compatibility.
4. Verify that a command device exists on the array if you want to collect performance data from the host station.
5. Inspect the host station log for errors. The log file contains more information when `Logger.DebugLevel=8` is added to the `paxp_service.properties` file. The default log level is 1. To return to the default log level, set `Logger.DebugLevel=1`. To turn off logging, set `Logger.DebugLevel=0`. For example:
 - Debug using increased log level:
`Logger.DebugLevel=8`
 - Set log level default to ERROR:
`Logger.DebugLevel=1`
 - Disable logging:
`Logger.DebugLevel=0`
6. Reinstall the host agent if the previous steps do not solve the problem.

Host Agent: Verifying that It Is Operational

1. Check `HostAgentErr.log` for the host agent startup messages. On all supported operating systems, adding `Logger.DebugLevel=8` (default is 1) to `paxp_service.properties` results in printing the software version to `PerformanceAdvisorXP.log`.
2. Verify that the HP OpenView SAM HostAgent service is running on Windows, or a host agent daemon is running on UNIX. On UNIX, enter `ps -ef |grep -I java`. Then look for the `/opt/sanmgr/jre/bin...` in the process list.
3. Stop and start the host agent service on Windows or the host agent daemon on UNIX. See [Host Agent File Locations and Start/Stop Commands](#) for instructions on stopping and starting the host agent.
4. View the version string and verify that it is the same version as appears on the GUI screen.
5. Turn off logging to `PerformanceAdvisorXP.log` when troubleshooting is complete.

Host Agent Is Not Pointing to the Correct Management Station

The wrong management station name is referenced. Edit the `paxp_service.properties` file and replace with the correct management station name.

Host Agent File Locations and Start and Stop Commands

Property file:

Windows: c:\Program Files\Hewlett-Packard\sanmgr\hostagent\config\paxp_service.properties

UNIX: /opt/sanmgr/hostagent/config/paxp_service.properties

Windows log files:

c:\Program Files\Hewlett-Packard\sanmgr\hostagent\log\PerformanceAdvisorXP.log

c:\Program Files\Hewlett-Packard\sanmgr\hostagent\log\HostAgentErr.log

UNIX log files:

/opt/sanmgr/hostagent/log/PerformanceAdvisorXP.log

/opt/sanmgr/hostagent/log/HostAgentErr.log

Windows Start and Stop commands:

net start "HP OpenView SAM HostAgent"

net stop "HP OpenView SAM HostAgent"

Or by using the Windows Service

UNIX Start and Stop commands:

/opt/sanmgr/hostagent/sbin/HA_trigger start

/opt/sanmgr/hostagent/sbin/HA_trigger stop

Java Console Has Exceptions in It

The following are possible causes:

- The Apache engine is not running.
- The database is empty.
- The exceptions are from earlier problems and are no longer relevant.

To resolve this problem:

1. Go to Start > Settings > Control Panel > Services.
2. Select HpssApache.
3. Select the Start button if the Status field is blank.
4. Clear the Java Console and restore the current page.

Logging In to PA XP

The following error message appears when you log in to PA XP:

"HpssPaTomcat/HpssPaSolid services may not be started!"

To resolve this problem:

1. In Internet Explorer, go to Tools > Internet Options.
2. In the Connections tab, click LAN Settings.
3. In the Local Area Network (LAN) Settings dialog box, click Advanced.
4. In the Exceptions box, type the IP address or fully qualified DNS name of the management station.

Management Station: Verifying that It Is Operational

1. Verify that the HpssApache, HpssPaSolid, and HpssPaTomcat services are running.
2. Verify that JRE 1.4.2_03 is installed by typing `java - version` at the command line prompt (from the management station home directory). Solid expects this version level.

Management Station Is Not Collecting Performance Data

1. View the Array Information window under the Configuration tab. Verify that the host station name appears.
2. View the Data Collection window under the Configuration tab. Verify that data collection is enabled and the data collection frequency is between 1 and 60 minutes. Data collection will not appear until the data collection interval has elapsed.

Management Station Is Not Responding

If accessing the management station from Command View XP and two or more network interface cards (Ethernet) are installed on the management station, sometimes the PA XP address will not be resolved. If this happens, try the following:

1. Verify that the management station URL address entered in the browser is correct.
2. Verify the network configuration by pinging.
3. Verify the management station installation.
4. Verify browser compatibility.
5. Inspect the Apache logs for errors.
6. Inspect the Java Console for errors.
7. Stop and restart the HpssApache service on the management station.
8. Reinstall the management station.

Netscape 7.0 or Greater: Client Browser Is Not Working on HP-UX

If HP-UX is not working with Netscape 7.0 or greater, you must enable Java and disable the proxy server if the management station is inside of the firewall. To do so, follow these steps:

1. In Netscape 7.0 or greater, click Edit.
2. Click Preferences.
3. Click Advance.
4. Select the Enable Java checkbox.

If the management station is inside the firewall and you have a proxy server, continue with the following steps:

1. Return to Advance.
2. Click Proxies.
3. Click View Manual Proxy.
4. In the No Proxy For field, enter the name of the management station.

Note: If your system is configured with Automatic Proxy, contact your network administrator.

Network Configuration

1. Verify that the two machines can ping each other by IP address and symbolic name.
2. For each machine, verify that the machine's DNS IP address returned by nslookup matches the IP address reported by ipconfig.
3. Check basic http file access. Enter
`http://your_server_name/pa/schemas/HostConfigListClient.xml` to see if the web browser can perform simple file access that does not use any Java code.

PA XP Applets and CLUI Are Not Receiving Performance Data from the Database

Data is not being received even though it is reflected in the database, and no errors are noted in the log files or Java Console.

To resolve this problem, verify that the host system clock is set within one year of the management station clock.

RAID Manager Library

Problems with the RAID Manager Library can manifest itself in several ways. The most common symptoms are exceptions or error messages that indicate a shared library could not be found or could not be accessed. The cause might be that the symbolic link from PA XP to the RAID Manager Library has been broken, or that portions of the library have been removed.

Caution: Making any changes to RMLIB can disrupt the operation of Continuous Access, Business Copy, or any other application that uses RMLIB.

To Recover

1. Remove any links to the library by removing `/opt/xppa/RMLIB`.
2. Remove the library itself by removing `/usr/lib/RMLIB` and `/usr/lib/libsvrrm.sl`.
3. Remove the PA XP host station software with `/opt/xppa/uninstall.sh`.
4. Reinstall the host station software by running the `install.sh` script from the tar file. This reinstalls the proper RAID Manager Library and the host PA XP software.

Note: You can also reinstall the RAID Manager Library without reinstalling the host software. To do so, run the `RLinstsh` script from the tar file and provide the directory `/usr/lib` in response to the prompt.

Sun Host Fails to Communicate with the Command Device

The Sun host agent has a memory/file handle error and is unable to communicate with the command device. When a command device is shared by Sun and either Windows NT or Windows 2000, the Windows NT or Windows 2000 user might not be able to use the disk administration utility because this utility overwrites the disk partition label on the command device. If this happens, Sun cannot communicate with the command device.

Solution

Configure Sun and Windows NT or Windows 2000 with their own command device. By doing so, they cannot access the other command device and modify the partition label.

Unable to Browse to the Management Station

When the management station is not known to the DNS server, follow these steps:

Note: The following is an example of the basic procedure. Make sure that you change the IP address in the following procedure to the IP address that your management station uses.

1. Add ;192.168.0.1 to the list of addresses to bypass your proxy server.
Note: Using Internet Explorer as an example, follow this procedure to add your IP address: Go to Tools > Internet Options. Select the Connections tab. Click LAN settings. Click Advanced. In the Exceptions text box, place your cursor at the end of the domain list. Type a semicolon and your IP address, including the asterisk if you want to include everything within the last octet. Click OK.
2. Close and then re-open the web browser.
3. Enter `http(s)://192.168.0.1/pa`.
4. Enter administrator for the username and administrator for the password (unless you have changed it from the default). Save, if desired.
5. If the browser returns with an unresolved hostname for `http(s)://<servername>/pa`, change it to `http://192.168.0.1/pa`, and then use that URL. Doing so takes you to the management station's default PA XP page.

Using SSL Apache Web Server

Change `protocol=http` to `protocol=https` in the `paxp_service.properties` file.

Uninstalling PA XP and Command View XP Requires Reboot

The following scenarios require a reboot:

- PA XP was operated as a standalone product and subsequently uninstalled.
- Command View XP was installed after PA XP was installed. Subsequently, Command View XP was uninstalled, and then PA XP was uninstalled.

It is important that you reboot the machine to completely remove the Apache service. Otherwise, this service will not be removed and problems might occur later.

Using LINUX or UNIX with Netscape

If you are using a LINUX or UNIX machine with Netscape and are unable to download the plug-in, make sure that your `JAVA_HOME` environment variable is set correctly.

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